## CONTENTS

	Ticiace	xi
	To the Student	XV
Chapter 1	PRELIMINARIES	1
	1-1 Basic Concepts	2
	1-2 Equality and Inequality	9
	1-3 Real Number Properties	19
	1-4 Addition and Subtraction	27
	1-5 Multiplication, Division, and Order of Operations	36
	1-6 Solving Equations	46
	1-7 Chapter Review	57
Chapter 2	POLYNOMIALS AND FACTORING	65
	2-1 Addition and Subtraction of Polynomials	66
	2-2 Multiplication of Polynomials	75
21 - 12 - 12 - 12 - 12 - 12 - 12 - 12 -		

	2-3 Factoring Out Common Factors; Factoring by Grouping	82
	2-4 Factoring Second-Degree Polynomials	87
	2-5 ac Test and Factoring (Optional)	94
	2-6 More Factoring	99
	2-7 Solving Equations by Factoring	106
	2-8 Chapter Review	109
Chapter 3	ALGEBRAIC FRACTIONS	112
	3-1 Rational Expressions	113
	3-2 Multiplication and Division	117
	3-3 Addition and Subtraction	122
	3-4 Quotients of Polynomials	128
	3-5 Complex Fractions	134
	3-6 Solving Equations	139
	3-7 Chapter Review	145
Chapter 4	LINEAR EQUATIONS AND INEQUALITIES	
	IN ONE VARIABLE	149
	4-1 Solving Equations and Applications	150
	4-2 Applications: Rate-Time and Miscellaneous Problems	159
	4-3 Formulas and Literal Equations	171
	4-4 Solving Inequalities	174
	4-5 Absolute Value in Equations and Inequalities	183
	4-6 Chapter Review	190
Chapter 5	EXPONENTS, RADICALS, AND COMPLEX NUMBERS	193
	5-1 Positive-Integer Exponents	194
	5-2 Integer Exponents	199
	5-3 Scientific Notation and Applications	207
	5-4 Rational Exponents	212
	5-5 Radical Forms and Rational Exponents	218
	5-6 Changing and Simplifying Radical Expressions	221
	5-7 Basic Operations on Radicals	229
	5-8 Complex Numbers	236
	5-9 Chapter Review	243
Chapter 6	SECOND-DEGREE EQUATIONS AND INEQUALITIES	249
	6-1 Solving Quadratic Equations by Square Roots and by Completing	
	the Square	250
	6-2 The Quadratic Formula	258
	6-3 Applications	265
	6-4 Radical Equations and Other Equations Reducible to Quadratic Form	270

270

	CONTENTS	ix
		••••••
	6-5 Nonlinear Inequalities	274
	6-6 Chapter Review	282
Chantan 7	CD A DIVING YMMON AND AND AND AND AND AND AND AND AND AN	202
Chapter 7	GRAPHING INVOLVING TWO VARIABLES	285
	7-1 Graphing Linear Equations	286
	7-2 Slope and Equations of a Line	297
	7-3 Graphing Linear Inequalities	310
	7-4 Graphing Quadratic Polynomials	317
	7-5 Conic Sections; Circles and Parabolas	328
	7-6 Ellipses and Hyperbolas	338
	7-7 Chapter Review	347
Chapter 8	SYSTEMS OF EQUATIONS AND INEQUALITIES	351
	8-1 Systems of Linear Equations in Two Variables	352
	8-2 Application: Mixture Problems	358
	8-3 Systems of Linear Equations in Three Variables	369
	8-4 Systems of Equations and Matrices (Optional)	377
	8-5 Systems of Linear Inequalities	386
	8-6 Systems Involving Second-Degree Equations	391
	8-7 Chapter Review	396
Chapter 9	FUNCTIONS	400
	9-1 Functions	
	9-2 Function Notation	401
	9-3 Graphing Polynomial Functions	413
	9-4 Inverse Functions	419
	9-5 Variation	426
	9-6 Chapter Review	435
		446
Chapter 10	EXPONENTIAL AND LOGARITHMIC FUNCTIONS	451
	10-1 Exponential Functions	452
	10-2 Logarithmic Functions	460
	10-3 Properties of Logarithmic Functions	466
	10-4 Logarithms to Various Bases	471
	10-5 Exponential and Logarithmic Equations	478
	10-6 Chapter Review	484
Chapter 11	SEQUENCES AND SERIES	488
	11-1 Sequences and Series	489
	11-2 Arithmetic Sequences and Series	495
	11-3 Geometric Sequences and Series	500
	11-4 Binomial Formula	506
	11-5 Chapter Review	511

*	CONTENTS
<b>L</b>	CONTENIO

Appendix	A A Word Problem Technique	514
	B Significant Digits	519
	C Determinants and Cramer's Rule	521
	Tables	533
	Answers to Selected Problems	540
	Index	575